Create Developed (Unrolled) Surfaces

INTRODUCTION

EnSight provides several sophisticated tools for extracting computational surfaces from meshes. For clipped surfaces with a defined axis of rotation (such as those created with the quadric clipping tools), the surface can "developed" or unrolled onto a plane. All variables defined on the clip are properly interpolated onto to the developed surface.

A clip can be developed based on curvilinear (radius, z), (theta, z), or (meridan, theta) coordinate projections. The "seam" of the clip can be specified interactively.

BASIC OPERATION

To create a developed surface:

part you created in step 1).

1. First, create the desired quadric clip (cylinder, sphere, or cone).

2. Select the parent part for the developed surface (i.e. the

4. Select the desired projection type (see below for details on the types).

6. To display and change the cutting seam, click the Show Cutting Seam button,

and adjust the slider.

----7. Click Create.

Help File Edit Query View Tools Prefs Case Show Variable Using Parts(s) Connection accepted. Pressure_P1 P 1-(M/C1) 1/7 Pump Section (51.42) Created new palette for activated variable Pressure_P1. Velocity_P2 2-(M/C1) M-Line (color 40) Created new palette for activated variable Velocity_P2. 3-(M/C1) Transition Face (color 1 Coordinates 4-(2/C1) Clip_cylinder Time Projection (theta,z) Scale Factors(u,v) 1.0000e+001.0000e+00Align with Parent Origin/Axis Show Cutting Seam Using Feature: Developed Surface Create/Update Show Legend Create Help... 3. Click the Developed 5. If applicable for the projection type (and Surface icon. desired) enter u,v scaling factors and

A part is developed by specifying one of three curvilinear mappings called *developed projections*. The projections are based on the curvilinear coordinates r (radius), z, θ (theta), and m (meridian or longitude). These coordinates are defined relative to the local origin and axis of the tool that created the parent part (*e.g.* the Cylinder tool). The projections are (r,z), (θ , z), and (m, θ). The u, v scale factors (only for (θ , z) or (m, θ) projections) provide scaling for the coordinates in the listed order. For example, if the projection is (θ , z) then u scales θ and v scales z.

SEE ALSO

How To Create Quadric Clips

User Manual: Developed Surface Create/Update

